# THE EFFICACY OF THE MacARTHUR COMPETENCE ASSESSMENT TOOL FOR TREATMENT DECISIONS (MacCAT-T) TO ASSESS SOUTH AFRICAN PATIENTS' ABILITIES TO GIVE CONSENT TO TREATMENT.

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## DECLARATION

I, the undersigned, hereby declare that the work contained in this thesis is my own original work and has not previously, in its entirety or in part, been submitted at any university for a degree

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## ABSTRACT

The efficacy of the MacCAT-T to assess the competency of South African patients to give consent to treatment was investigated with a group of hospitalised mentally-ill patients. Comparisons and correlations between MacCAT-T and clinical interviews (by clinicians and psychiatric nurses) indicate that the concurrent validity of the MacCAT-T is relatively high. The MacCAT-T thus appears to be an accurate indicator of competence to give consent to treatment. Clinicians in South Africa are likely to experience the MacCAT-T as a helpful guideline when making decisions concerning a patient's competency to give consent to treatment. The MacCAT-T was most accurate when conducted in a patient's home language. Before the MacCAT-T can be used optimally in South Africa, standardised translations of this assessment tool are essential. Although there is a significant association between education and competence to give consent to treatment, the MacCAT-T does not appear to be too advanced for the South African population. There was a significant association between legal status and Global Assessment of Functioning (GAF), and competency to give consent to treatment. Voluntary patients with higher GAF scores were more likely to be judged competent. Clinicians are thus encouraged to be aware of the numerous factors that may affect the assessment of competence to give consent to treatment.

## OPSOMMING

Die doeltreffendheid van die MacCAT-T om die bevoegdheid van Suid Afrikaanse pasiënte om toestemming te gee tot behandeling, te evalueer, was met 'n groep gehospitaliseerde, sielkundig versteurde pasiënte ondersoek. Vergelykings en korrelasies tussen die MacCAT-T en kliniese onderhoude (deur klinici en psigiatriese verpleegsters) dui aan dat die saamvallende geldigheid van die MacCAT-T relatief hoog is. Dit wil dus voorkom asof die MacCAT-T 'n akkurate aanduider is van bevoegdheid om toestemming te gee tot behandeling. Vir klinici in Suid Afrika, behoort die MacCAT-T 'n nuttige hulpmiddel te wees vir die evaluering van pasiënte se bevoegdheid om toestemming te gee tot behandeling. Die MacCAT-T was die akkuraatste wanneer dit in die persoon se huistaal uitgevoer was. Voordat die MacCAT-T optimaal in Suid Afrika gebruik kan word, is gestandaardiseerde vertalings van hierdie meetinstrument in ander tale noodsaaklik. Alhoewel daar 'n beduidende verband gevind is tussen vlak van opvoeding en bevoegdheid om toestemming te gee tot behandeling, behoort die MacCAT-T nie té gevorderd vir die Suid Afrikaanse bevolking te wees nie. Daar was 'n beduidende verband tussen wettige status en "Global Assessment of Functioning" (GAF), en bevoegdheid om toestemming te gee vir behandeling. Vrywillige pasiënte met hoër GAF tellings was meer geneig om bevoegd te wees. Dit is dus belangrik dat klinici bewus sal wees van die verskeidenheid van faktore wat in ag geneem behoort te word by die evaluering van bevoegdheid om toestemming te gee tot behandeling.

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# Introduction

## Background

With the greater weight given to patient autonomy in society, increased emphasis is placed on patients' right to consent to, or refuse, treatment (Appelbaum, Lidz & Meisel, 1987). As rational beings, people are granted the power to make decisions for themselves. According to Appelbaum and Gutheil (1991), competence can be seen as a threshold requirement for persons to retain the autonomy to make decisions for themselves. Society can and should however, step in to make decisions on behalf of those judged to be incompetent to make rational decisions. This is a serious issue, since the person found to be incompetent can be deprived of many rights. According to Appelbaum and Gutheil (1991), the concept of competence is too broad to use in an undifferentiated way. For purposes of analysis, they encourage a distinction between general competence and specific competence. General competence suggests that the ability to handle all one's affairs in an adequate manner is intact. Specific competence is defined only in relation to a particular act, for example, whether one is competent to make treatment decisions, to testify in court, or enter into a contract.

Before the middle of the twentieth century, it was assumed that people with mental illness were uniformly deficient in decision-making abilities and should be considered legally incompetent to consent to treatment (Appelbaum & Grisso, 1995). In recent decades, however, it has been found that mental illness does not necessarily lead to total decision-making incapacity (Grisso & Appelbaum, 1991, 1995a). Clinicians and courts in the United States of America now argue that persons with mental illness, like persons with mental retardation, often suffer selective impairment of decision-making abilities (Appelbaum & Grisso, 1995). It is thus possible for people to retain competence for many purposes. In some cases, decision-making abilities remain totally intact. The mere presence of mental illness is thus not sufficient in itself to constitute incompetence.

In medicine, the doctrine behind informed consent is aimed at ensuring that patients play an active role in making decisions about their care. According to Appelbaum et al., (1987), the doctrine of informed consent refers to the legal rules that prescribe behaviours for clinicians in their consultation with patients. It also provides penalties should clinicians deviate from those guidelines. It is a doctrine which strives to ensure patients their right of self-determination concerning medical decisions, and it encourages an interpersonal procedure whereby clinicians and patients decide together on an appropriate course of medical care (Appelbaum et al., 1987). Informed consent is fast becoming a universal prerequisite to the initiation of treatment procedures in mental health as well. The South African Supreme Court has likewise ruled, in Castell v De Graaf (1994), that the doctrine of informed consent also forms part of local law.

Psychologists also need to obtain informed consent prior to evaluating and treating patients (Allan, 1997).

According to Appelbaum and Grisso (1995), informed consent law in the United States of America has established three requirements for valid consent to treatment. First, clinicians, are responsible for providing patients with information regarding the nature and purpose of the recommended treatment, probable benefits, likely risks, and the alternatives to the proposed procedure. This includes the option to refuse treatment altogether - along with its benefits and risks. Second, patients must have the opportunity to make a voluntary decision. Finally, patients must be competent to make treatment decisions. Nowhere have clinicians found assessing competence an easy task (Arboleda-Florez, 1988 ; Beck, 1988 ; Draper & Dawson, 1990 ; Hoffman & Srinivasin, 1992 ; Tomoda et al., 1997). When determining specific competence, the four legal standards that are generally employed by the courts in the United States of America include the ability to communicate a choice, the ability to understand relevant information, the ability to appreciate the nature of the situation and its likely consequences, and the ability to manipulate information rationally (Appelbaum & Grisso, 1988, 1995 ; Appelbaum & Gutheil, 1991 ; Appelbaum & Roth, 1982 ; Drane, 1984 ; McKinnon, Cournos, & Stanley, 1989 ; Meisel, Roth, & Lidz, 1977 ; Roth, Meisel & Lidz, 1977 ; Tepper & Elwork, 1984).

Need for the assessment of competence

Many patients with mental illness may have their competence called into question. Competence therefore, has major implications for psychology and psychiatry. According to Grisso (1986), the highly intrusive nature of many treatments emphasises the importance of determining a patient's competence. When the question of competence to give consent to treatment is discussed, conflicting social values concerning autonomy and protection of patients have been debated extensively (Grisso, 1986). On the one hand is the liberation concern for individual freedom to exercise self-determination in matters affecting one's life. This view opposes presumptions of incompetence based merely on an individual's status as mentally ill. On the other hand is the humanitarian concern that the disabled should be protected from suffering because of their inability to make competent decisions. These opposing views have however emphasised the need for a functional assessment of a patient's competence.

According to Grisso (1986), the laws defining a patient's right to refuse or give consent to treatment, have important implications concerning professional responsibility in clinical decisions. These implications include the basis for claims of professional liability for damage. The potential for litigation is extensive. One example is a patient's claim to having been competent when treated without consent by practitioners who perceive the patient as incompetent

to consent. The careful assessment of competence to give consent, therefore, is of crucial concern in order to avoid professional liability suits.

Need for an instrument which assesses competence

In clinical practice, South Africa's psychologists and psychiatrists are inclined to challenge a person's competency only in those cases where the prescribed treatment is resisted (Allan & Allan, in press). There is thus a risk that persons who remain silent about treatment are considered competent to give consent. If the person is in fact competent, this is not a problem. However, this should be avoided with individuals who are not competent to make treatment decisions (Tomoda et al., 1997). Furthermore, a clinician cannot assume that an uncooperative patient suffering from mental illness is incompetent to give consent to treatment (Tomoda et al., 1997). Should such a patient be treated against his/her will without an assessment of competence, the clinician's judgement is liable to be called into question. Currently, there is no standardised means of assessing a patient's competence to consent to treatment in South Africa. Clinicians rely merely on a clinical evaluation and judgement when determining a patient's ability to give consent to treatment. Allan and Allan (in press) therefore make two suggestions. Firstly they believe that it is necessary to evaluate all people upon admission to determine their competency to give consent to treatment. This recommendation is also supported by Janofsky, McCarthy and Folstein (1992). Secondly, they emphasise the need to establish a cost and time efficient procedure to guide South African clinicians involved in the treatment of people who are mentally ill. They suggested that for this purpose a standardised instrument such as the MacArthur Treatment Competence Research Instruments (MTCRI) should be considered.

The MacArthur Study

For the past 6 years, the Research Network on Mental Health and the Law in the United States of America has conducted an extensive study, the MacArthur study, of three critical areas central to mental health law: competence, coercion, and risk (Winick, 1996). The examination of competence has looked closely at both criminal competence (competence to stand trial) and civil competence (competence to make treatment decisions). According to Winick (1996), the MacArthur study is one of the most ambitious social science research projects ever undertaken involving an area of law.

The MacArthur Treatment Competence Study

The MacArthur Treatment Competence Study formed part of the MacArthur study. It explored the decision-making abilities of patients in an effort to make the law and policy makers more aware of patients' rights (Grisso & Appelbaum, 1998a). The MacArthur Treatment Competence Study was designed to develop

reliable and valid information with which to address clinical and policy issues regarding the abilities of persons with mental illness to make psychiatric treatment decisions (Appelbaum & Grisso, 1995). The study led to the development of reliable and valid measures of decision-making abilities conceptually related to four major legal standards for competence to consent to treatment. These measures were then administered to clinical samples to produce data on the comparative functioning of persons with and without mental illness.

Winick (1996) believes that the MacArthur Treatment Competence Study will trigger important legal changes that will have significant therapeutic benefits for patients. By experimentally exposing the fallacy of the assumption that mental illness deprives patients of their decision-making capacity, the MacArthur study has succeeded in creating pressure for needed legal reforms. Legal changes and an emphasis on "teaching" the disclosure of information are likely to produce therapeutic advantages for patients, improving the efficacy of hospitalisation and treatment and enhancing the therapist-patient relationship.

The development of the MacCAT-T

In the effort to develop standardised means of assessing decision-making abilities in the context of consent to treatment, the MTCRI were designed (Appelbaum & Grisso, 1995 ; Grisso, Appelbaum, Mulvey & Fletcher, 1995). These instruments offered reliable and seemingly valid estimates of decision-making competence (Grisso & Appelbaum, 1995a). However, it was found that the MTCRI which had been designed for research purposes, were lengthy, complex and required considerable time and effort for administration and scoring. As a result, clinicians were discouraged from using these instruments when evaluating competence to consent to treatment in clinical settings. Nonetheless, it was this extensive research which led to the development of the MacCAT-T: a standardised instrument designed specifically for clinical assessments of abilities related to competence to consent to treatment (Berg, Appelbaum & Grisso, 1996).

The MacCAT-T uses features of the research instruments and was designed to evaluate and rate patients' abilities related to four standards for competence to consent to treatment, namely, understanding, appreciation, reasoning and communication of a decision (Grisso & Appelbaum, 1995b). It has a semi-structured interview format designed to guide clinicians and patients through a process of disclosure of information related to informed consent, as well as an evaluation of patients' abilities to make decisions based on the information (Grisso & Appelbaum, 1995b). It allows the assessment of abilities in the context of the patient's own specific symptoms and treatment options. A study examining the reliability and validity of the MacCAT-T provided indications of both validity and inter-rater reliability (Grisso & Appelbaum, 1995b).

Before conducting the MacCAT-T interview, the clinician selects the relevant information to be disclosed to the patient. This information is obtained from the patient's hospital folder and includes the patient's own symptoms, diagnosis, and treatment needs. The selected information is then recorded by the clinician in appropriate sections of the MacCAT-T Record Form (see Appendix A), which provides the structure and sequence for the interview (Grisso & Appelbaum, 1995b).

The MacCAT-T interview begins with a disclosure of the nature of the patient's disorder and proceeds through the suggested treatment, its benefits and risks, and alternative treatments. It ends with the patient expressing a treatment choice and explaining how the choice was made. During this process, the MacCAT-T provides questions to be asked by the clinician in order to assess patients' abilities to understand, appreciate, and reason with the disclosed information, and to conclude with a clear expression of a choice. The MacCAT-T interview usually takes 15-20 minutes to complete (Grisso & Appelbaum, 1995b).

Understanding is evaluated by investigating the patient's capacity to paraphrase what has been disclosed to them concerning (a) the disorder, (b) the recommended treatment, and (c) the treatment's benefits or risks. Should a patient demonstrate poor understanding, the MacCAT-T prompts the clinician to re-disclose the information and re-assess the patient's understanding (Grisso & Appelbaum, 1995b).

Appreciation is assessed with questions which explore whether patients acknowledge that (a) the disclosed information applies to them, or (b) that treatment may have at least some benefit. Beliefs based on delusional or distorted perceptions will indicate a lack of appreciation (Grisso & Appelbaum, 1995b).

Reasoning ability is determined by asking patients questions which examine explanations for their choices: (a) whether consequences or treatment alternatives have been considered (Consequential Thinking), (b) whether any alternatives have been compared (Comparative Thinking), (c) whether consequences other than those offered in the disclosure have been generated by the patient (Generating Consequences), and (d) whether the patient's final choice follows logically from his or her own explanation. Finally, the ability to express a choice is evaluated by investigating whether patients state a preference for a treatment option (Grisso & Appelbaum, 1995b).

Responses to these questions are recorded on the MacCAT-T Record Form and the quality of each response is rated thereafter (see Appendix A). Ratings are 2 (adequate), 1 (partial), and 0 (inadequate). Specific criteria and examples are provided to guide clinicians' ratings (Grisso & Appelbaum, 1995b).

The method provides summary ratings of 0-6 on Understanding, 0-4 on Appreciation, 0-8 on Reasoning, and 0-2 on Expressing a Choice (Grisso & Appelbaum, 1995b). A manual (Grisso & Appelbaum, 1995b) and video ( Grisso & Appelbaum, 1996b) for administration and recording and rating responses for the MacCAT-T are available. No particular MacCAT-T Summary Rating, even one that is comparatively very low, necessarily indicates legal incompetence of the patient to make treatment decisions. Considered alone, the MacCAT-T Summary Ratings should be interpreted as indicating the level of performance of the patient on the MacCAT-T interview. Clinicians are encouraged to interpret those ratings clinically, in order to describe the meaning of the patient's MacCAT-T performance. This requires the use of clinical observations derived from diagnostic assessment, mental status examination, and psychiatric or psychological history. MacCAT-T scores are therefore most useful when combined with a clinical interpretation (Grisso & Appelbaum, 1995b).

People with MacCAT-T Summary Ratings that fall in the "average" range or better on the norms for all four types of MacCAT-T abilities are very likely to have sufficient decision-making abilities to be judged competent to make treatment decisions (Grisso & Appelbaum, 1995b). While very low MacCAT-T Summary Ratings will suggest the possibility of incompetence to make treatment decisions, low ratings alone rarely will provide an adequate basis for making the final judgement. Assessments of a patient's status of incompetence should also take into account clinical information about the patient, circumstances of the patient's disorder, the situational context in which the patient must make a decision about treatment, and the ways that local laws and regulations define competence (Grisso & Appelbaum, 1995b). The MacCAT-T is therefore not like the typical psychological test that has been constructed to produce scores that would form a normal distribution in the general population. The necessary threshold of competence varies across cases according to contextual factors. The "average" score for a random sample of citizens is thus not the "average" for a random sample of patients in a hospital (T.Grisso, personal communication, May 7, 1997). These factors will need to be taken into consideration when interpreting MacCAT-T scores (Grisso & Appelbaum, 1995b).

In response to Allan and Allan's (in press) suggestion that the MTCRI could be used in South Africa, the researcher decided to evaluate the usefulness of the MacCAT-T locally. Various obstacles which could effect the use of this instrument locally, were identified. The first potential obstacle was language. The MacCAT-T is an assessment tool which was developed and standardised in the United States of America (USA). It is only available in English. The USA is a developed country and the vast majority of its people speak English (UNESCO, 1997). South Africa on the other hand is a developing country with a multicultural population (Psychological Association of South Africa, 1989 ; Schoeman, 1991 ; UNESCO, 1997). At least 11 languages are spoken by its people (SA to Z, 1996). Before the MacCAT-T can be used successfully in South Africa,

researchers would first need to determine whether these differences influence MacCAT-T scores of competence. According to Grisso and Appelbaum (1996a), linguistic factors may cause some patients to appear not to comprehend information merely because they cannot express their understanding.

A subject's level of education is another aspect which could effect the use of the MacCAT-T in South Africa. In 1985, statistics of the educational attainment of all South Africans, 25 years and over, revealed that 24,8% of them had no schooling. Only 2,3% had post secondary (tertiary) qualifications (UNESCO, 1997). In comparison, statistics for the USA show that in 1994, only 0,6% of the population aged 25 years and over had no schooling. In addition, 46,5% of this population group had educational qualifications at tertiary level (UNESCO, 1997). The level of education in the USA is therefore considerably higher than in South Africa. Furthermore, literacy levels in the Western Cape were estimated at 75% (Development Bank of Southern Africa, 1994). In 1995, adult (15 years and over) illiteracy rates for South Africa were 18,2% (UNESCO, 1997). In 1979, illiteracy statistics in the USA for the age group 25-44 years were 0,3% (UNESCO, 1997). Illiteracy rates for the age group 45-64 years were 0,7% (UNESCO, 1997). These figures indicate that South Africa's illiteracy rates are considerably higher than those in the USA. The MacCAT-T was designed and standardised in the USA. Taking the above mentioned factors into consideration, the MacCAT-T may be too advanced or complex for effective use in South Africa.

It is important, particularly in the South African health situation, to determine whether the MacCAT-T is a time efficient tool. The South African health services are currently experiencing financial difficulties after the health budget was cut considerably in certain areas. Consequently, many hospitals have reduced their number of employees. Fewer personnel are now forced to cope with the same workload. Many hospitals in South Africa may find it difficult to implement a policy whereby all patients are assessed for clinical competency. This was thus a third factor which was investigated.

The MacArthur Treatment Competence Study found that on measures of understanding and reasoning, the performance of patients who manifested a greater severity of psychopathology, was poorer (Grisso & Appelbaum, 1996a). As a result of this finding, the researcher decided to record each subject's Global Assessment of Functioning (GAF) described in the fourth edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM - IV) (APA, 1994). A GAF score is a reflection of a person's general level of functioning and is recorded on Axis V of the five axis diagnosis. For the purpose of this study, GAF scores were a representation of the person's current general level of functioning as evaluated by the clinician on the day of admission. GAF levels give an indication of the patient's psychological, social and occupational functioning on a hypothetical continuum of mental health-illness (APA, 1994). This continuum

ranges between scores of 0 and 100. Recording GAF levels would enable the researcher to determine whether this factor is associated with MacCAT-T scores of competence.

Appelbaum, Mirkin and Bateman (1990), Beck (1988) and, Hoffman and Srinivasan (1992) found that there is an association between the legal status of a psychiatric patient and his or her perceived competence. The researcher therefore decided to investigate this aspect as well. In South Africa, the treatment and admission of mentally ill patients is governed by the Mental Health Act, 18 of 1973, (MHA) and the regulation (MHR) framed in terms thereof (Allan, 1995). The current policy of the Department of Health is to control all admissions of patients to psychiatric hospitals and wards (Allan, 1995). In broad terms, there are three avenues by which a person can be admitted to a psychiatric unit. Only the two civil procedures apply to this particular study. Firstly, admission can be at the request of the patient. Two sections are relevant here: Section 3 and Section 4 (Allan, 1995). In both cases, the patient is admitted on a voluntary basis. Section 3 patients are judged to have the legal capacity to understand the meaning and effect of the request to be admitted. Section 4 patients are judged to lack this legal capacity and a significant other must be prepared to sign the application on behalf of the patient (Allan, 1995). An instrument such as the MacCAT-T could be very useful in making this distinction. Secondly, patients can be involuntarily admitted to a psychiatric institution. This is only justified where the person is: a danger to himself or others as a result of mental disorder and refuses or resists treatment, observation and control (Allan, 1995). Two sections are relevant here: Section 9 and 12. Section 9 patients are involuntarily admitted to a psychiatric unit after a magistrate is satisfied that the person is "mentally ill to such a degree that it is necessary that he or she be detained, controlled and treated" (Section 9(3)) (Allan, 1995). A section 12 procedure is followed in cases of exceptional urgency. It enables the superintendent, on application of a person older than 18, to receive, detain and treat a person against his or her will (Allan, 1995).

Grisso and Appelbaum (1995b) conducted a study aimed at exploring the feasibility, reliability, and validity of MacCAT-T use in psychiatric settings in the USA. In this study, the MacCAT-T was administered to 40 hospitalised patients admitted to Worcester State Hospital, and 40 matched, non-ill subjects in the community (Grisso and Appelbaum,1995b). According to Grisso and Appelbaum (1995b) the data obtained from that study can be used by clinicians as a baseline against which they can compare their own patients' performance. MacCAT-T scores obtained in this study would therefore be interpreted by comparing them to the baseline MacCAT-T scores obtained from the group of hospitalised patients assessed at the Worcester State Hospital in the USA (Grisso and Appelbaum, 1995b). The baseline scores obtained from their study would thus be used as the norm to determine whether patients in this study were competent or incompetent as assessed by the MacCAT-T.

Finally, for the purpose of validating instruments, Grisso and Appelbaum (1996a) encourage studies comparing instrument - based results with expert judgements of competence. Such studies are warranted in order to determine whether the MacCAT-T provides ratings corresponding to actual clinical judgements of competence or incompetence to consent to treatment. For the purpose of this study, the clinical judgements made by the clinicians and nurses were used as the external criterion against which to examine the concurrent validity of the MacCAT-T.

In summary, the present study was therefore a pilot investigation designed to explore whether the MacCAT-T is an instrument clinicians in South Africa could use effectively to guide them when assessing a patient's competency to give consent to treatment.

The general aim of this pilot study was to determine the efficacy of the MacCAT-T to assess the competency of South African patients to give consent to treatment. The specific aims were to:
(a) compare the results obtained from the MacCAT-T assessments of competency with those obtained from clinical interviews (by clinicians and nurses) at the time of admission,
(b) to determine whether there is a significant association between language, level of education, legal status and general level of functioning, and MacCAT-T scores of competence, and
(c) to make recommendations concerning the assessment of competency to consent to treatment in South Africa.

## Method

### Subjects

The data was collected at the Admissions Unit of Stikland Psychiatric Hospital in the Western Cape. This is one of the major psychiatric hospitals in this province. Alcohol rehabilitation patients, geriatric (60 years and over) patients, acutely ill patients and chronically ill patients, are the four main groups of patients admitted to Stikland Hospital. All patients admitted to the hospital between 08h00 and 16h30, from Monday to Friday, over a two month period were considered as subjects for the sample. Patients who report at the Admissions Unit are first seen by one of the three senior nurses working permanently at the unit. It is their task to obtain all the patient's particulars, including identity, place of residence, letter of referral and so forth. Once the patient has been seen by one of the nurses, he of she is thoroughly evaluated by one of the five clinicians working at the Admissions Unit. All clinicians working here are qualified medical practitioners who are training to become Psychiatrists. As part of the evaluation conducted by the admitting clinician, a five axis diagnosis of the patient's condition is drawn up. These diagnoses are based on the DSM - IV criteria (APA, 1994). The clinician must, as a standard procedure, record a recommended treatment plan in the patient's folder. This includes making a decision about the patient's competence to consent to be admitted to the hospital. This decision is based on clinical observation and judgement. The home language of virtually all the patients admitted to the hospital is either English or Afrikaans, with Afrikaans being predominant. However, all the Afrikaans subjects were able to understand English.

In an effort to make the study more specific, only patients admitted to the acute wards of Stikland Hospital were approached by the researcher. Any patients with a working diagnosis of Mental Disorder due to a General Medical Condition and cases where the possibility of mental retardation existed, were excluded from the sample. This was in an attempt to rule out intellectual ability as a confounding factor. Patients with a working diagnosis of a Personality Disorder were not included in the study as they are usually competent to give consent to treatment and their inclusion may have biased the results. The effect of this was that any patients with a working diagnosis on Axis II were excluded from the study. Stikland Hospital do not as a rule admit patients younger than 18 years of age. Children were thus excluded from the sample. All subjects had to be bilingual (English and Afrikaans). The researcher, as well as all personnel working at the Admissions Unit are bilingual. They are able to speak both English and Afrikaans, but very few of them are fluent in one of the other official languages. It was for this reason, and because the majority of patients are either English- or Afrikaans-speaking, that only patients whose home language was English or

Afrikaans were considered as subjects. With regard to South African population statistics, the representation of this sample was thus limited.

Once inclusion and exclusion criteria had been considered, there were 121 patients who were invited to take part in the study. A total of 120 patients, or their legally acknowledged representatives, accepted the invitation. Seventy-two subjects (60%) were male and the home language of 31(25,83%) was English, while 89 (74,17%) spoke Afrikaans. The mean age of the group was 34,41 years (SD = 9,59) and ranged from 18 to 56 years. The level of education, expressed in years, ranged from 0 to 18 (M = 9,04 ; SD = 3,56). An analysis of participants' working diagnosis at the time of admission is presented in Table 1.

Table 1

Analysis of Working Diagnoses of subjects (APA, 1994).

| Working diagnosis | n | Percent |
|---|---|---|
| Substance - Induced Psychotic Disorder | 16 | 13,33 |
| Schizophrenia | 50 | 41,67 |
| Schizophreniform Disorder | 2 | 1,67 |
| Delusional Disorder | 3 | 2,50 |
| Bipolar 1. Disorder | 19 | 15,83 |
| Bipolar 2. Disorder | 1 | 0,83 |
| Major Depressive Disorder | 17 | 14,17 |
| Major Depressive Disorder With Psychotic Features | 4 | 3,33 |
| Dysthymic Disorder | 2 | 1,67 |
| Adjustment Disorder | 3 | 2,50 |
| Generalized Anxiety Disorder | 1 | 0,83 |
| Posttraumatic Stress Disorder | 1 | 0,83 |
| Panic Disorder | 1 | 0,83 |
| Total | 120 | 100 |

In order to determine the effect of language, it was decided to administer the MacCAT-T in three different conditions. The first group of subjects were patients whose home language was English (n=31). The MacCAT-T was administered in English to this group. The 89 subjects who were Afrikaans-speaking were randomly divided into an Afrikaans group and a "Crossed"-group. Patients were split up randomly into the two groups by picking the letter "A" (for Afrikaans) and "E" (for English) out of a box. The MacCAT-T was administered in Afrikaans to the Afrikaans group and in English to the "Crossed"- group. In the case of the "Crossed"-group, the researcher used his own (unstandardised) Afrikaans translation of the MacCAT-T. The Afrikaans-group comprised 44 subjects and the "Crossed"-group 45 subjects. Details of the descriptive statistics for each of the three groups mentioned above are recorded in Table 2.

Table 2

Descriptive statistics for each of the three groups included in the study

| | Afrikaans-group (n=44) | "Crossed"-group (n=45) | English-group (n=31) |
|---|---|---|---|
| Gender - Male | 27(61,36%) | 26(57,78%) | 19(61,29%) |
| Gender - Female | 17(38,64%) | 19(42,22%) | 12(38,71%) |
| M (age) | 36,20 | 34,00 | 32,45 |
| SD | 10,33 | 8,12 | 10,32 |
| M (level of education) | 7,68 | 8,49 | 11,77 |
| SD | 3,03 | 3,60 | 2,68 |
| Legal Status - Section 3 | 18(40,91%) | 20(44,44%) | 19(61,29%) |
| Section 4 | 14(31,82%) | 9(20,00%) | 5(16,13%) |
| Section 9 | 11(25,00%) | 16(35,56%) | 5(16,13%) |
| Section 12 | 1(2,27%) | 0 | 2(6,45%) |
| M (GAF) | 50,23 | 48,89 | 51,29 |
| SD | 8,49 | 7,60 | 6,58 |
| M (time in minutes for MacCAT-T interview) | 17,95 | 15,07 | 18,10 |

Procedure

The admitting nurse and clinician were asked to follow their standard procedures at the Admissions Unit. Three highly experienced nurses work permanently at the Admissions Unit. Each nurse has at least 10 years' experience working in a psychiatric unit. Five clinicians are involved with the admission of patients to the hospital. These clinicians are qualified medical practitioners who are training to become psychiatrists. As part of their psycholegal course, both clinicians and nurses receive extensive training with regard to the question of competence (A.Allan, personal communication, May 15, 1997). For the purpose of this study, clinicians and nurses were also asked to determine a patient's clinical competence to give consent to treatment. Both the admitting clinician and nurse were asked to record their judgements separately, on a special form. This form was then sealed in an envelope and placed in a container. These clinical judgements of competency were made independently by each clinician and nurse involved with the admission of each patient. The researcher remained blind to these findings until all the data had been collected.

Once the clinician had decided that a patient was to be admitted to one of the acute wards of the hospital, the researcher was approached and informed of the possible participant for the study. The researcher first made sure that the patient met the necessary inclusion criteria before he or she was asked to participate. This clarity was obtained by examining information recorded in the patient's personal folder. Thereafter, the objectives and nature of the study were explained to each potential participant, or a person who represented them. Participation was voluntary and participants, or a person who represented them, were asked to complete a consent form. Thereafter, biographical information

(age, home language, gender and educational qualifications) was obtained by the researcher and recorded on a data collection form (see Appendix B). Other information such as legal status at admission, working diagnosis and global assessment of functioning (GAF) were obtained from the patient's folder. If a patient had received any form of medication 24 hours prior to admission, this information was recorded on the data collection form. In this way, the possible effect of medication on the presence of psychiatric symptoms and hence competence was controlled. MacCAT-T interviews were then conducted by the researcher with each of the participants. Interviews were conducted in the various ways described earlier. The researcher was responsible for conducting all the above mentioned interviews. He interpreted all the MacCAT-T Record Forms and calculated the Summary Ratings. Responding to a recommendation made by Grisso and Appelbaum (1995b), MacCAT-T scores were interpreted further by comparing them to baseline MacCAT-T scores obtained from a group of hospitalised patients at Worcester State Hospital in the USA (Grisso and Appelbaum, 1995b). Their baseline scores were used as the norm to determine whether patients in this study were competent or not as assessed by the MacCAT-T.

## Results

In order to compare clinical data and MacCAT-T scores of competence to give consent to treatment, so-called true and false positives and negatives were first identified. True positives indicate the number of cases where both the MacCAT-T scores and clinical judgements identified patients as competent to give consent to treatment. True negatives reflect the number of cases where both MacCAT-T and clinical judgements found patients to be incompetent to give consent to treatment. The word "true" represents cases where the MacCAT-T and clinical interviewer agreed on a patient's competency status. "False" rates refer to cases where these judgements of competence differed (C. Parry, personal communication, August 14, 1997). "Positive" refers to cases where subjects were judged to be competent and "negative" where subjects were judged to be incompetent. True and false positives and negatives for MacCAT-T and clinician assessments of competence appear in Tables 3 (total sample), 4 (Afrikaans-group), 5 ("Crossed"-group), and 6 (English-group).

To compare MacCAT-T scores of competence with the judgements made by clinicians, the results presented in Tables 3-6 were processed further. Sensitivity and specificity analyses were used to make these comparisons (Sen, Wilkinson & Mari, 1987). Sensitivity reflects the ability of the MacCAT-T to correctly identify subjects also identified by clinicians as competent to give consent to treatment. Specificity refers to the ability of the MacCAT-T to correctly identify subjects also identified by clinicians as incompetent (C. Parry, personal communication, August 14, 1997). Sensitivity and specificity was calculated using the following formulas:

$$\text{Sensitivity (\%)} = A/(A+C) \times 100$$

$$\text{Specificity (\%)} = D/(B+D) \times 100$$

The misclassification rate refers to the number of false positives and negatives and is expressed as a percentage. The percentage false positives and negatives were determined by using these formula:
Percentage of false positives = 100 - specificity
Percentage of false negatives = 100 - sensitivity
The misclassification rate was calculated by using the following formula: (false positives + false negatives)/total x 100. The chi square test is used to measure the association between any two categorical variables. For all the chi square tests, Yates' correction was used. In a few cases one could have used the Pearson-correlation but it was decided to continue with the more conservative chi square test throughout. Yates' chi square tests were used in this study to determine the association between clinician and MacCAT-T judgements of competence. Phi correlations are used to calculate the correlation between variables which only had two response categories (dichotomous variables) (C. Parry, personal communication, August 14, 1997). Phi correlations were used to measure the correlation between MacCAT-T and clinician assessments of competence. Results of the above mentioned analyses are presented in Table 7.

Table 3

MacCAT-T and clinician ratings for the total sample (N=120): true and false positives and negatives

| | Clinician | | |
|---|---|---|---|
| MacCAT-T | Yes (competent) | No (not competent) | Total |
| Yes (competent) | 48 (A)<br>true positives | 2 (B)<br>false positives | 50 |
| No (not competent) | 16 (C)<br>false negatives | 54 (D)<br>true negatives | 70 |
| Total | 64 | 56 | 120 |

Table 4

MacCAT-T and clinician ratings for the Afrikaans-group (n=44): true and false positives and negatives

| | Clinician | | |
|---|---|---|---|
| MacCAT-T | Yes (competent) | No (not competent) | Total |
| Yes (competent) | 16 (A)<br>true positives | 1 (B)<br>false positives | 17 |
| No (not competent) | 5 (C)<br>false negatives | 22 (D)<br>true negatives | 27 |
| Total | 21 | 23 | 44 |

Table 5

MacCAT-T and clinician ratings for the "Crossed"-group (n=45): true and false positives and negatives

| | Clinician | | |
|---|---|---|---|
| MacCAT-T | Yes (competent) | No (not competent) | Total |
| Yes (competent) | 13 (A)<br>true positives | 0 (B)<br>false positives | 13 |
| No (not competent) | 8 (C)<br>false negatives | 24 (D)<br>true negatives | 32 |
| Total | 21 | 24 | 45 |

Table 6

MacCAT-T and clinician ratings for the English-group (n=31): true and false positives and negatives

| | Clinician | | |
|---|---|---|---|
| MacCAT-T | Yes (competent) | No (not competent) | Total |
| Yes (competent) | 19 (A)<br>true positives | 1 (B)<br>false positives | 20 |
| No (not competent) | 3 (C)<br>false negatives | 8 (D)<br>true negatives | 11 |
| Total | 22 | 9 | 31 |

Table 7

Sensitivity, specificity, percentage false positives and negatives, misclassification rates, chi square tests and Phi correlations (ø) obtained from clinician and MacCAT-T judgements of competence for the various groups

| | Group | | | |
|---|---|---|---|---|
| Measure | Total sample (N=120) | Afrikaans-group (n=44) | "Crossed"-group (n=45) | English-group (n=31) |
| Sensitivity | 75,0% | 76,2% | 61,9% | 86,4% |
| Specificity | 96,4% | 95,7% | 100,0% | 88,9% |
| % false positives | 3,6% | 4,3% | 0,0% | 11,1% |
| % false negatives | 25,0% | 23,8% | 38,1% | 13,6% |
| Misclassification rate | 15,0% | 13,6% | 17,8% | 12,9% |
| $X^2$ | 59,79** | 20,96** | 17,99** | 12,68** |
| ø | 0,723 | 0,737 | 0,681 | 0,714 |

**p < ,01

In Table 7, Yates' chi square tests indicate that for all four groups, there was a statistically significant association between clinicians and MacCAT-T determinations of competency, $X^2$ (1,N=120) = 59,79, p < 0,01, $X^2$ (1,n=44) = 20,96, p < 0,01, $X^2$ (1,n=45) = 17,99, p < 0,01, $X^2$ (1,n=31) = 12,68, p < 0,01. Furthermore, Phi correlations for all four groups were positive, indicating that the two judgements were in the same direction, ø (N=120) = 0,723, ø (n=44) = 0,737, ø (n=45) = 0,681, ø (n=31) = 0,714. For all phi correlations, the degree of significance was not calculated as this was determined using the Yates' chi square tests.

As was mentioned, the competence ratings made by the nurses were introduced primarily to act as a "control" of the judgements made by clinicians. The judgements of competence made by nurses were also used to compare MacCAT-T scores with clinical interview data. True and false positives and negatives for MacCAT-T and nurse assessments of competence appear in Tables 8 (total sample), 9 (Afrikaans-group), 10 ("Crossed"-group), and 11 (English-group). Sensitivity, specificity, percentage false positives and negatives, misclassification rate, Yates' chi square tests, and Phi correlations were calculated to compare MacCAT-T and nurse judgements of competence further. These results are reflected in Table 12.

Table 8

MacCAT-T and nurse ratings for the total sample (N=120): true and false positives and negatives

| | Nurse | | |
|---|---|---|---|
| MacCAT-T | Yes (competent) | No (not competent) | Total |
| Yes (competent) | 44 (A)<br>true positives | 6 (B)<br>false positives | 50 |
| No (not competent) | 22 (C)<br>false negatives | 48 (D)<br>true negatives | 70 |
| Total | 66 | 54 | 120 |

Table 9

MacCAT-T and nurse ratings for the Afrikaans-group (n=44): true and false positives and negatives

| | Nurse | | |
|---|---|---|---|
| MacCAT-T | Yes (competent) | No (not competent) | Total |
| Yes (competent) | 13 (A)<br>true positives | 4 (B)<br>false positives | 17 |
| No (not competent) | 7 (C)<br>false negatives | 20 (D)<br>true negatives | 27 |
| Total | 20 | 24 | 44 |

Table 10

MacCAT-T and nurse ratings for the "Crossed"-group (n=45): true and false positives and negatives

| | Nurse | | |
|---|---|---|---|
| MacCAT-T | Yes (competent) | No (not competent) | Total |
| Yes (competent) | 13 (A)<br>true positives | 0 (B)<br>false positives | 13 |
| No (not competent) | 10(C)<br>false negatives | 22 (D)<br>true negatives | 32 |
| Total | 23 | 22 | 45 |

Table 11

MacCAT-T and nurse ratings for the English-group (n=31): true and false positives and negatives

| | Nurse | | |
|---|---|---|---|
| MacCAT-T | Yes (competent) | No (not competent) | Total |
| Yes (competent) | 18 (A)<br>true positives | 2 (B)<br>false positives | 20 |
| No (not competent) | 5 (C)<br>false negatives | 6 (D)<br>true negatives | 11 |
| Total | 23 | 8 | 31 |

Table 12

Sensitivity, specificity, percentage false positives and negatives, misclassification rates, chi square tests and Phi correlations (ø) obtained from nurse and MacCAT-T judgements of competence for the various groups

| | Group | | | |
|---|---|---|---|---|
| Measure | Total sample (N=120) | Afrikaans-group (n=44) | "Crossed"-group (n=45) | English-group (n=31) |
| Sensitivity | 66,7% | 65,0% | 56,5% | 78,3% |
| Specificity | 88,9% | 83,3% | 100,0% | 75,0% |
| % false positives | 11,1% | 16,7% | 0,0% | 25,0% |
| % false negatives | 33,3% | 35,0% | 43,5% | 21,7% |
| Misclassification rate | 23,3% | 25,0% | 22,2% | 22,6% |
| $X^2$ | 35,46** | 8,81** | 14,84** | 5,21* |
| ø | 0,561 | 0,494 | 0,623 | 0,487 |

*p < ,05. **p < ,01.

Yates' chi square test results in Table 12 indicate that for all four groups, there was a statistically significant association between nurse and MacCAT-T determinations of competency, $X^2$ (1,N=120) = 35,46, p < 0,01, $X^2$ (1,n=44) = 8,807, p < 0,01, $X^2$ (1,n=45) = 14,843, p < 0,01, $X^2$ (1,n=31) = 5,212, p < 0,05. Phi correlations for all four groups were positive, indicating that the two judgements were in the same direction, ø (N=120) = 0,561, ø (n=44) = 0,494, ø (n=45) = 0,623, ø (n=31) = 0,4871.

Results in Table 7 and 12 indicate that the MacCAT-T corresponds better with clinician assessments of competence than with nurse assessments of competence. Consequently, the association between language, level of education, legal status, and GAF, and competence was investigated using the judgements of competence made by the clinician and MacCAT-T. Nurses were therefore excluded from these analyses.

The Yates' chi square test was used to investigate the association between home language and competency. Clinician and MacCAT-T ratings of competence for English and Afrikaans-speaking subjects are presented in Table 13.

Table 13

The association between home language and competency as determined by clinicians and the MacCAT-T (N=120)

| | Competent (n) | | | Incompetent (n) | | | |
|---|---|---|---|---|---|---|---|
| | Afrikaans-speaking | English-speaking | Total | Afrikaans-speaking | English-speaking | Total | $X^2$ |
| Clinicians | 42 | 22 | 64 | 47 | 9 | 56 | 4,311* |
| MacCAT-T | 30 | 20 | 50 | 59 | 11 | 70 | 7,756** |

*p < ,05. ** p < ,01.

In Table 13, results of a Yates' chi-square test of association reveal a statistically significant association between language and competency as assessed by clinicians, $X^2$ (1,N = 120) = 4,311, p < 0,05. Clinicians rated English speakers as more competent than Afrikaans speakers (with 47,2% of Afrikaans speakers being rated as competent and 71,0% of English speakers being rated as competent).

A Yates' chi-square test of association revealed a statistically significant association between language and competency as assessed by MacCAT-T, $X^2$ (1,N = 120) = 7,756, p < 0,01. The MacCAT-T rated more English speakers as competent than Afrikaans speakers (with 33,7% of Afrikaans speakers being rated as competent and 64,5% of English speakers being rated as competent).

Results in Table 7 indicate that when using clinician's assessments as the external criterion, the sensitivity levels for the "Crossed"-group dropped dramatically (from 76% to 62%, i.e. by 14%). The percentage of false negatives increased dramatically (from 24% to 38%, that is, by roughly 14%). When Afrikaans patients were interviewed in English, the MacCAT-T tended to underestimate the number of persons who were competent, that is, it tended to indicate that more people were "not competent" than clinicians did. Looking at the sensitivity and the misclassification rates in Table 7, the MacCAT-T appears

to be best suited to English-speaking patients, followed by Afrikaans-speaking patients interviewed in Afrikaans, and then by the Afrikaans-speaking patients interviewed in English. The comparison between nurse and MacCAT-T ratings of competence revealed very similar findings. These results are presented in Table 12.

A t test for independent samples was used to examine the association between level of education and competency. Mean levels of education for subjects judged to be competent and incompetent by clinicians and the MacCAT-T, appear in Table 14.

Table 14

Mean levels of education (years) for subjects judged to be competent and incompetent by clinicians and the MacCAT (N=120)

| | Competent | | | Incompetent | | | |
|---|---|---|---|---|---|---|---|
| | n | M | SD | n | M | SD | t |
| Clinicians | 64 | 9,94 | 3,43 | 56 | 8,02 | 3,46 | 3,047** |
| MacCAT-T | 50 | 10,40 | 3,38 | 70 | 8,07 | 3,39 | 3,717** |

**p < ,01

A t test for independent samples was first undertaken to determine whether the number of years of education differed significantly for those determined by clinicians to be competent or incompetent. The 2-tailed test of significance was undertaken and a statistically significant difference was found between those determined to be competent and incompetent by clinicians, t (118, N = 120) = 3,047, p < 0,01. Results are reflected in Table 14. Inspection of means indicates that years of education were higher for those determined to be competent.

A t test for independent samples was also undertaken to determine whether the number of years of education differed significantly for those determined by the MacCAT-T to be competent or incompetent. The 2-tailed test of significance was undertaken and a statistically significant difference was found between those determined to be competent and incompetent by the MacCAT-T, t (118, N = 120) = 3,717, p < 0,01. Inspection of means in Table 14 indicates that years of education were higher for those determined to be competent.

The Yates' chi square test was used to investigate the association between legal status and competency. Clinician and MacCAT-T ratings of competence for section 3, 4, and 9 patients are presented in Table 15.

Table 15

Ratings of competence for section 3, 4, and 9 patients determined by clinicians and the MacCAT-T (n=117)

| | Competent (n) | | | | Incompetent (n) | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Section 3 | Section 4 | Section 9 | Total | Section 3 | Section 4 | Section 9 | Total | $X^2$ |
| Clinicians | 51 | 6 | 6 | 63 | 6 | 22 | 26 | 54 | 56,813** |
| MacCAT-T | 40 | 5 | 3 | 48 | 17 | 23 | 29 | 69 | 39,480** |

**p < ,01

Given the small number of Section 12 patients (n=3), this group was dropped from the analysis. In Table 15, results of a chi-square test reveal a statistically significant association between legal status and competency as assessed by clinicians, $x^2$ (2,n = 117) = 56,813, p < 0,01. Results indicate that section 3 patients were more likely to be rated as competent when compared to section 4 and 9 patients.

A chi-square test of association revealed a statistically significant association between legal status and competency as assessed by the MacCAT-T, $x^2$ (2,n = 117) = 39,480, p < 0,01. Results in Table 15 indicate that section 3 patients were more likely to be rated as competent when compared to section 4 and 9 patients.

A t test for independent samples was used to examine the association between GAF and competency. Mean GAF scores for subjects judged to be competent and incompetent by clinicians and the MacCAT-T, appear in Table 16.

Table 16

Mean GAF scores for subjects judged to be competent and incompetent by clinicians and the MacCAT-T (N=120)

| | Competent | | | Incompetent | | | |
|---|---|---|---|---|---|---|---|
| | n | M | SD | n | M | SD | t |
| Clinicians | 64 | 54,38 | 6,52 | 56 | 45,00 | 5,64 | 8,3667** |
| MacCAT-T | 50 | 54,70 | 6,81 | 70 | 46,64 | 6,47 | 8,582** |

**p < ,01

A t test for independent samples was first undertaken to determine whether GAF scores differed significantly for subjects judged to be competent and subjects judged to be incompetent by clinicians. The 2-tailed test of significance was undertaken and a statistically significant difference was found between those determined to be competent and incompetent by clinicians, t (118, N = 120) = 8,3667, p < 0,01. Inspection of means in Table 16 indicate that GAF scores were higher in those determined to be competent.

A t test for independent samples was undertaken to determine whether GAF scores differed significantly for those patients judged to be competent and incompetent by the MacCAT-T. The 2-tailed test of significance was undertaken and a statistically significant difference was found between those determined to be competent and incompetent by the MacCAT-T, t (118, N = 120) = 8,582, p < 0,01. Inspection of means indicates that GAF scores were higher in those determined to be competent. These findings are reflected in Table 16.

A stepwise discriminant analysis was undertaken to determine whether language, level of education, legal status and GAF, have a significant effect on the misclassification rate. When comparing clinician and MacCAT-T judgements of competence, 18 subjects were misclassified and 102 were not. Mean scores for each of the independent variables for the two groups are presented in Table 17. Dummy variables were created to handle the non-interval scale variables: legal status (voluntary and involuntary status) and language (Afrikaans-group and "Crossed"-group).

Table 17

Mean scores for each of the independent variables for the two levels of classification

| Misclassification | Education (years) | Legal status | GAF | Afrikaans-group | "Crossed"-group | Valid n |
|---|---|---|---|---|---|---|
| Yes | 9,444445 | 0,222222 | 53,05556 | 0,333333 | 0,444444 | 18 |
| No | 8,970589 | 0,303922 | 49,46078 | 0,372549 | 0,362745 | 102 |
| All groups | 9,041667 | 0,291667 | 50,00000 | 0,366667 | 0,375000 | 120 |

None of the variables presented in Table 17 appear to have a significant effect on the misclassification rate. This is borne out by the results of the discriminant analysis presented in Table 18. All of the p values were greater than 0,05 indicating that at none of the steps was the discriminant significant. In other words, none of these variables are useful in discriminating between subjects who are "correctly" classified and those who are misclassified.

Table 18

Discriminant analysis using language, level of education, legal status and GAF as the independent variables

| N = 120 | Wilks' Lambda | p-level |
|---|---|---|
| Afrikaans-group | 0,963732 | 0,681529 |
| "Crossed"-group | 0,970138 | 0,337363 |
| Level of education | 0,964532 | 0,608373 |
| Legal status | 0,962569 | 0,859352 |
| GAF | 0,988659 | 0,079905 |

Wilks' Lambda: 0,96230 approx. F (5,114)=0,89316, p < 0,4883

Investigations revealed that there were no statistically significant associations between gender and competency, nor age and competency. For the purpose of the present study, too few persons received medication prior to assessment to make it a critical factor in competency. Given the smaller sample size, more stringent $\alpha$ levels were not set to counter the possibility of Type I Error (finding a statistically significance difference which is really just an artefact of the number of tests undertaken, i.e. because of chance).

## Discussion

For all three groups there is a significant association between clinicians' and MacCAT-T determinations of competence. Concurrent validity is thus relatively high. This suggests that the MacCAT-T is an accurate indicator of clinical competence as assessed by a clinician. There is also a significant association between nurses' and MacCAT-T assessments of competence. However, the MacCAT-T appears to correspond better with clinicians' assessments of competence. This is possibly due to the fact that during the admission process, nurses spend much less time with each patient than clinicians do. Their assessment time is limited. Clinicians' judgements thus appear to be a more favourable external criterion and indicator of clinical competence.

Language, as anticipated, is one of the factors which had a significant influence on MacCAT-T scores of competence. The MacCAT-T appears to be most accurate when conducted in a patient's home language. The misclassification rate is highest for Afrikaans-speaking patients interviewed in English. These subjects may have experienced difficulty expressing themselves in English. Their MacCAT-T scores of competence are likely to have been disadvantageously affected by this situation. Currently, the MacCAT-T is only available in English. This finding is likely to limit its potential use in South Africa where numerous languages are spoken (SA to Z, 1996). Standardised translations of this assessment tool are necessary to address this restriction.

A subject's educational qualifications were investigated in an effort to determine whether the MacCAT-T is too advanced for patients in South Africa. If this assessment tool was too advanced for this sample, a subject's MacCAT-T rating of competence is likely to have been disadvantaged by low educational status. This would in turn have had a significant effect on the misclassification rate. However, a patient's level of education does not have a significant effect on the misclassification rate in this study. Therefore, the MacCAT-T does not appear to be too advanced for effective use in South Africa. However, educational qualifications are significantly higher for patients judged to be competent by

both clinicians and the MacCAT-T. If there is a tendency for less educated and illiterate persons to be judged less competent, this is likely to bias the results and reduce the validity of the MacCAT-T. Further investigation of this association is thus crucial, and clinicians are encouraged to pay close attention to levels of education when assessing competence.

There is a statistically significant association between legal status and competency as assessed by clinicians and the MacCAT-T. Voluntary patients (section 3 and 4) are more likely to be rated as competent when compared to patients admitted on an involuntary basis. About 86% of the involuntary patients and 47% of the voluntary patients are found to be incompetent after conducting the MacCAT-T. These findings are similar to other reports (Appelbaum et al., 1990 ; Beck, 1988 ; Hoffman & Srinivasan, 1992).

The investigation of the relationship between general level of functioning (GAF) and competency indicates that GAF scores are higher in those cases judged to be competent by both clinicians and the MacCAT-T. These findings are similar to studies which found that risk of incompetence may be greater in patients who are presenting a more severe symptom picture (Appelbaum & Grisso, 1995 ; Benson, Roth, Appelbaum, Lidz & Winslade, 1988 ; Gold & Harvey, 1993 ; Grisso & Appelbaum, 1991, 1995b ; Jones & Offord, 1975). Independent measures of symptom severity are thus essential when assessing competency to give consent to treatment.

The average time taken to conduct each MacCAT-T interview in this study correlates closely with estimates given by Grisso and Appelbaum (1996b). The MacCAT-T appears to be an economically feasible tool which is useful for rapidly screening large numbers of patients. However, the obstacles currently crippling the health services in South Africa will make it virtually impossible for hospitals to adopt a policy whereby all patients are evaluated for clinical competency.

Using the baseline scores obtained by Grisso and Appelbaum (1995b) to interpret the MacCAT-T ratings generated through this study is not optimal. The MacCAT-T was not constructed to produce scores that would form a normal distribution in the general population. The necessary threshold of competence varies across cases according to contextual factors (Winick, 1996). Using scores obtained by researchers in other studies as a norm is thus not encouraged, as MacCAT-T scores will be different for each target population. This situation could be avoided in the future by comparing mentally ill patients' scores of competence with a non-ill community group matched according to age, gender, level of education and socio-economic status. Research which will produce baseline scores for population groups in South Africa is also warranted.

The MacCAT-T appears to be an instrument which is relatively easy to administer. Limited training is necessary for clinicians wishing to use this assessment tool. Other types of competency, such as competency to stand trial, could be assessed with screening instruments similar to the MacCAT-T format.

Clinicians in South Africa are likely to experience the MacCAT-T as a very helpful guideline when making decisions concerning a patient's competency to give consent to treatment. It is proposed that the MacCAT-T is a useful tool for screening patients in South Africa for their clinical competency to make treatment decisions. This study serves to validate this proposal. Similar studies in other areas and settings are however encouraged to determine the generalizability of the results in patient groups which are more representative of the South African population. Research aimed at developing standardised translations of the MacCAT-T into other languages spoken in South Africa is encouraged. Further investigations of the association between competence and level of education are essential.

Clinicians are thus encouraged to be aware of the numerous factors that may affect the assessment of competence. Religion, culture, language, level of education, legal status, diagnostic information, mental status, severity of the symptoms, psychodynamic formulations and, the medical and social circumstances are all factors which have the potential to cloud the assessment of competence. In order to avoid incorrect conclusions being made about a patient's competence, these factors must be considered when assessing competence to give consent to treatment.

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## Appendix A

### MacCAT-T RECORD FORM

Patient: Clinician:

Date: Time: Unit:

**Understanding-Disorder**

Disclose--"Now please explain in your own words what I've said about your condition."
Probe (if necessary)--Re-Disclose and Re-Inquire (if necessary)

| Disclosure | Patient Response |
|---|---|
| #1 Diagnosis | Rating ☐ |
| #2 Feature of Disorder | Rating ☐ |
| #3 Feature of Disorder | Rating ☐ |
| #4 Feature of Disorder | Rating ☐ |
| #5 Course of Disorder | Rating ☐ |
| | **Understanding-Disorder (Sum)** ☐ |
| Other | |

## Appreciation-Disorder

Inquire: "Now that is what we think is the problem in your case. If you have any reason to doubt that, I'd like you to tell me so. What do you think?"

☐ Agrees ☐ Disagrees ☐ Ambivalent

Probe: If patient disagrees or is ambivalent, description of disagreement and patient's explanation.

| Explanation | |
|---|---|
| | Appreciation-Disorder ☐ |

## Understanding-Treatment

Disclose--"Now please explain in your own words what I've said about this treatment."
Probe (if necessary)--Re-Disclose and Re-Inquire (if necessary)

| Disclosure | Patient Response |
|---|---|
| #1 Name of Treatment | Rating ☐ |
| #2 Feature of Treatment | Rating ☐ |
| #3 Feature of Treatment | Rating ☐ |
| #4 Feature of Treatment | Rating ☐ |
| | **Understanding-Treatment (Sum)** ☐ |
| Other | |

## Understanding-Benefits/Risks

Disclose--"Now please explain in your own words what I've said about benefits and risks of this treatment."
Probe (if necessary)--Re-Disclose and Re-Inquire (if necessary)

| Disclosure | Patient Response |
|---|---|
| #1 Benefit | Rating ☐ |
| #2 Benefit | Rating ☐ |
| #3 Risk | Rating ☐ |
| #4 Risk | Rating ☐ |

**Understanding-benefits/Risks (Sum)** ☐

| Other | |
|---|---|

### Appreciation-Treatment

Inquire: "You might or might not decide that this is the treatment you want--we'll talk about it later. But do you think it's possible that this treatment might be of benefit to you?"

☐ Agrees ☐ Disagrees ☐ Ambivalent

Probe: "So you feel that it is/isn't possible for that treatment to be some help for your condition. Can you explain that to me? What makes it seem that the treatment would/wouldn't be of possible benefit to you?"

Appreciation-Treatment ☐

### Alternative Treatments

See AT Forms, one for each Alternative Treatment.

### First Choice and Reasoning

Choice: "Let's review the choices that you have. First..; second..; etc [name each treatment option reviewed earlier, including no-treatment option]. Which of these seems best for you? Which do you think you are most likely to want?"

Choice _____

Inquire: "You think that [state patient's choice] might be best. Tell me what it is that makes that seem better than the others."

Probe: Discuss explanation to explore reasoning process.

Explanation

Consequential ☐

Comparative ☐

### Generate Consequences

Inquire-1: "I told you about some of the possible benefits and risks or discomforts of [name patient's preferred treatment option]. What are some ways that these might influence your everyday activities at home or at work?"

Consequences -1

Consequences-1 ☐

Inquire-2: "Now let's consider [name of any other treatment or the no-treatment option]. What are some other ways that the outcomes of that option might influence your everyday acuvities at home or at work?"

Consequences-2

...quences-2 ☐

Generate Consequences (Sum) ☐

### Final Choice

Inquire: "When we started this discussion you favored [insert "First Choice" from earlier inquiry, or that the patient seemed to be having difficulty deciding]. What do you think now that we have discussed everything? Which do you want to do?"

Choice

Express choice ☐

### Logical Consistency of Choice

Examiner's Explanation:

Logical Consistency ☐

## MacCAT-T Rating Summary

| | Sum of Ratings | ÷ | Number of Items | | Subtotal Rating |
|---|---|---|---|---|---|
| **Understanding** | | | | | |
| Disorder | ____ | ÷ | ____ | = | ____ |
| Treatment | ____ | ÷ | ____ | = | ____ |
| Benefits/Risks | ____ | ÷ | ____ | = | ____ |
| | | | | **Understanding Summary Rating (0-6)** | ☐ |
| **Appreciation** | | | | | |
| Disorder | | | | | ____ |
| Treatment | | | | | ____ |
| | | | | **Appreciation Summary Rating (0-4)** | ☐ |
| **Reasoning** | | | | | |
| Consequential | | | | | ____ |
| Comparative | | | | | ____ |
| Generate Consequences | | | | | ____ |
| Logical Consistency | | | | | ____ |
| | | | | **Reasoning Summary Rating (0-8)** | ☐ |
| | | | | **Expressing A Choice Summary Rating (0-2)** | ☐ |

**Optional: Summary scores for Understanding of each alternative treatment**

Alternative 1:

Alternative 2:

Alternative 3:

Alternative 4:

## Appendix B

### Data Collection Form

Date of admission: _____ File number: _____

Age: _

Gender: Male ☐ Female ☐

Home language: ☐ Afrikaans ☐ English

Number of successfully completed years at school: __

Legal status on admission: ☐ S. 3 ☐ S. 4 ☐ S. 9 ☐ S. 12 ☐ Other _____

Medication within 3 hours of admission: ☐ Yes ☐ No

If yes , specify type of medication: _____

Global assessment of functioning : ☐

Working diagnosis: _____

MacCAT-T score of competence: ☐

Language the MacCAT-T was administered in: ☐ English ☐ Afrikaans

Time taken to assess using the MacCAT-T: ___